

REMARKS

Claims 1, 2, 4-8, and 10-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Shimizu et al., U.S. Patent 6,069,440 (hereinafter “Shimizu”). Applicants respectfully traverse the rejection.

Claim 1 recites “a cerium-doped garnet phosphor having a cerium concentration between about 4 mol% and about 8 mol%.” The Examiner states “Shimizu et al. disclose . . . [at] column 12, lines 1-4; a content of 0.003-0.2 Ce[, which] is 0.3-20% mol% Ce.” If Applicants assume that the reference intends to teach a cerium concentration between 0.3 mol% and 20 mol%, as argued by the Examiner, Applicants respectfully note that Shimizu teaches a much, much broader range for cerium concentration than claim 1.

MPEP section 2131.03 addresses anticipation of ranges recited in a claim. Specifically, MPEP 2131.03 states “[i]f the claims are directed to a narrow range, the reference teaches a broad range, and there is evidence of unexpected results within the claimed narrow range, depending on the other facts of the case, it may be reasonable to conclude that the narrow range is not disclosed with “sufficient specificity” to constitute an anticipation of the claims. The unexpected results may also render the claims unobvious.”

Applicants respectfully submit that Shimizu does not disclose the range of claim 1 with sufficient specificity to constitute anticipation of claim 1. For example, Shimizu’s range spans two orders of magnitude, while claim 1’s range does not even span one. In addition, Shimizu offers no guidance for the best values *within* the range. Shimizu merely states the reasons for the end points of the range: “When the content (degree of substitution) of Ce is set within the range from 0.003 to 0.2, the relative luminous intensity of light emitting diode of not less than 70% can be achieved. When the content is less than 0.003, luminous intensity decreases because the number of excited emission centers of photoluminescence due to Ce

decreases and, when the content is greater than 0.2, density quenching occurs.” See column 12, lines 6-9.

In addition, Applicants have demonstrated the unexpected results of the range claimed in claim 1. For example, paragraph 15 and Fig. 2 of the present application describe how the excitation spectrum of a cerium-doped garnet phosphor is widened by using the claimed cerium concentration. Applicants have found no discussion in Shimizu of the problem of the narrow excitation spectrum of cerium doped garnet phosphors, which is particularly exacerbated by operation at high power, as described in paragraph 13 of the present application, nor does Shimizu describe how the cerium concentration may be selected to broaden the excitation range.

In view of the above arguments, Applicants respectfully submit that Shimizu does not anticipate claim 1, since the range claimed in claim 1 is not disclosed with sufficient specificity. Further, Shimizu does not render claim 1 obvious, since Applicants have demonstrated the unexpected results achieved with the claimed range. Applicants respectfully request that the Examiner allow claim 1 over Shimizu. Claims 2, 4-8, and 10-14 depend from claim 1 and are therefore allowable over Shimizu for at least the same reason as claim 1.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu in view of Srivastava et al., WO 00/33390. The Examiner cites WO 00/33390 to teach a second wavelength converting material. As such, WO 00/33390 adds nothing to the deficiencies of Shimizu with respect to claim 1. Claim 9 depends from claim 1 and is therefore allowable over Shimizu and WO 00/33390 for at least the same reason claim 1 is allowable over Shimizu.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu in view of Sonobe, U.S. Patent 6,921,928. The Examiner cites Sonobe to teach a garnet host. As such, Sonobe adds nothing to the deficiencies of Shimizu with respect to claim 1. Claim 3

depends from claim 1 and is therefore allowable over Shimizu and Sonobe for at least the same reason claim 1 is allowable over Shimizu.

In view of the above arguments, Applicants respectfully request allowance of claims 1-14. Should the Examiner have any questions, the Examiner is invited to call the undersigned at (408) 382-0480.

Submitted Electronically

Respectfully submitted,

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